What is claimed is:

1.   A cardiac rhythm management device, comprising:

a sensing channel for sensing ventricular electrogram signal and generating a ventricular sense (R wave) when the electrogram signal exceeds a specified threshold value;

circuitry for measuring and collecting time intervals between successive R waves and storing the collected intervals as a discrete RR interval signal;

bandpass filters for filtering the RR interval signal into defined high and low frequency bands;

a power detector for determining the signal power of the RR interval signal in each of the low and high frequency bands, referred to LF and HF, respectively; and,

circuitry for computing an LF/HF ratio and triggering a diagnostic mode if the LF/HF ratio exceeds a predetermined ratio threshold value, wherein upon entering the diagnostic mode, the device activates processing circuitry that performs data analysis to assess the probability of the occurrence of a pathological event.

2.   The device of claim 1 further comprising circuitry for resampling the RR interval signal to equalize the time intervals between values of the RR interval signal.

3.   The device of claim 1 further comprising circuitry for detecting ectopic ventricular beats and filtering the RR intervals before and after such beats to derive the RR interval signal.

4.   The device of claim 1 further comprising:

circuitry for detecting ectopic ventricular beats and computing an ectopic beat density as the ratio of ectopic to non-ectopic beats over a specified time period; and,

wherein the diagnostic mode is triggered only when the ectopic beat density also exceeds a predetermined density threshold value.

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9.
5. The device of claim 1 wherein the low frequency band approximately 0.04 – 0.15 Hz and the high frequency band is approximately 0.15 – 0.40 Hz.

10.
6. The device of claim 1 further comprising circuitry for averaging the LF/HF ratio for a specified averaging period.

11.
7. The device of claim 1 wherein the predetermined ratio threshold value is determined by the device based upon previous measurements.

12.
8. The device of claim 7 wherein the ratio threshold is set to approximately 50% of the maximum computed LF/HF ratio value during a previous day.

5.
9. The device of claim 4 wherein the ectopic beat density threshold is dependent upon previous measurements.

10.
10. The device of claim 9 wherein the ectopic beat density threshold is set to approximately 20% above the daily average of the previous day plus one standard deviation.

7.
11. The device of claim 4 further comprising circuitry for delivering an appropriate therapy when the LF/HF ratio and ectopic beat density exceed their respective predetermined threshold values.

8.
12. The device of claim 4 further comprising circuitry for transmitting an alert signal to an external device when the LF/HF ratio and ectopic beat density exceed their respective predetermined threshold values.

13.   A method for operating a cardiac rhythm management device, comprising:

sensing ventricular electrogram signals and generating a ventricular sense (R wave) when the electrogram signal exceeds a specified threshold value;

measuring and collecting time intervals between successive R waves and storing the collected intervals as a discrete RR interval signal;

filtering the RR interval signal into defined high and low frequency bands;

determining the signal power of the RR interval signal in each of the low and high frequency bands, referred to LF and HF, respectively; and,

computing an LF/HF ratio and triggering a diagnostic mode if the LF/HF ratio exceeds a predetermined ratio threshold value, wherein upon entering the diagnostic mode, the device activates processing circuitry that performs data analysis to assess the probability of the occurrence of a pathological event.

14.   The method of claim 13 further comprising resampling the RR interval signal to equalize the time intervals between values of the RR interval signal.

15.   The method of claim 13 further comprising detecting ectopic ventricular beats and filtering the RR intervals before and after such beats to derive the RR interval signal.

16.   The method of claim 13 further comprising:

detecting ectopic ventricular beats and computing an ectopic beat density as the ratio of ectopic to non-ectopic beats over a specified time period; and,

triggering the diagnostic mode only when the ectopic beat density also exceeds a predetermined density threshold value.

17.   The method of claim 13 wherein the low frequency band approximately 0.04 – 0.15 Hz and the high frequency band is approximately 0.15 – 0.40 Hz.

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18. The method of claim 13 further comprising averaging the LF/HF ratio for a specified averaging period.

19. The method of claim 1 wherein the predetermined ratio threshold value is based upon previous measurements.

20. The method of claim 19 wherein the ratio threshold is set to approximately 50% of the maximum computed LF/HF ratio value during a previous day.